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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/707,599	11/07/2000	Takafumi Terasawa	13700-	9669

23370 7590 10/20/2005

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EXAMINER

ORTIZ RODRIGUEZ, CARLOS R

ART UNIT PAPER NUMBER

2125

DATE MAILED: 10/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/707,599	Applicant(s) TERASAWA, TAKAFUMI	
	Examiner Carlos Ortiz-Rodriguez	Art Unit 2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-8, 10, 12-14 and 18-21 is/are rejected.
- 7) ☒ Claim(s) 5, 11, 12, 15-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 7/13/05 have been fully considered but they are not persuasive. Applicant's arguments state that Edelman does not describe utilization of time for carrying information. Furthermore, arguments state that the patterns along the time axis are all uniform and the information processed is only an output at a single time t ; and that Edelman describes that the state of each cell is characterized by a single time-dependent scalar variable, $S_i(t)$. It should be noted that there is a difference between *single time* and a *single scalar variable*.

Claim Objections

2. Claims 5, 11, 15-19 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

3. Claim 12 objected to because of the following informalities: there seems to be a typographical error in the term "whole of the information units". Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-4, 10, 12, 14, and 18-20 are rejected under 35 U.S.C. 112, second paragraph.

Claim 1 recites the term "the other pattern information pieces" in line 10. There is insufficient antecedent basis for this terms in the claim.

Claim 1 additionally recites the term "the pattern information pieces". This term renders the claim indefinite because it is ambiguous whether the "the pattern information pieces" are the pattern information pieces recited in line 5 or the pattern information pieces recited in line 10.

Claim 2 recites the term "the other stored patterns". There is insufficient antecedent basis for this terms in the claim.

Claim 2 additionally recites the term "the cells" in line 11. This term renders the claim indefinite because it is ambiguous whether the "the cells" are the same cells of line 3.

Claim 3 recites the term "the new sets of cells". There is insufficient antecedent basis for these terms in the claim.

Claim 4 recites the term "the cell value" in line 13 and "the repressed activity levels" in line 13. There is insufficient antecedent basis for this term in the claim. It should be noted that it is also unclear if the term "the repressed activity levels" is referring to calculated activity levels.

Claim 4 additionally recites the term "of other ones of the stored patterns" in line 10. This term renders the claim indefinite because it is ambiguous and it is not clear what "other ones" it is referring to.

Claim 10 recites the term "the other read patterns" in line 10 and the term "the repressed activity levels" in line 12. There is insufficient antecedent basis for these terms in the claim.

Claim 12 recites the term "the other pattern information pieces". There is insufficient antecedent basis for this term in the claim.

Claim 14 recites the term "the other stored patterns". There is insufficient antecedent basis for this term in the claim.

Claim 18 recites the term "the cell". There is insufficient antecedent basis for this term in the claim.

Claim 19 recites the term "the cell". There is insufficient antecedent basis for this term in the claim.

Claim 20 recites the term "each iteration". There is insufficient antecedent basis for this term in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Regarding claims 6-8 rejected under 35 U.S.C. 102(b) as being anticipated by Edelman et al. U.S Patent No. 5,136,687.

Regarding claims 6-8, Edelman et al. discloses a method of generating patterns from input information, comprising the steps of: entering an input pattern into a network of elements arranged at predetermined intervals, each of the elements directing an input impulse toward a next element, and thereafter, rejecting to direct input impulses toward the next element until predetermined conditions are met (C5 L1-30).

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and generating a response rule corresponding to the input pattern according to routes formed by the elements in response to the input pattern (C40 L52-68 and C41 L1-15);

wherein the refractory period of one of the elements is changed in response to a pattern of stimulations to the element, intervals of stimulations to the element, or state of the element (C23 L59-68 and C24 L1-5).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-4, 10, 12-14 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edelman et al. U.S Patent No. 5,136,687 in view of Ravi Chandran U.S. Patent No. 5,038,390.

Regarding claims 1-4, 10, 12-14 and 20-21 Edelman et al. discloses a method of analyzing pattern information pieces each being a set of information units, each of the information units having a scalar representing a specific characteristic as an attribute, the method

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comprising the steps of: calculating an activity level of each of the pattern information pieces according to the scalars of the information units of the pattern information pieces and scalars of a sets of information units associated with an input pattern information piece(C5 L1-30 and C18 L17-32);

repressing a predetermined number of times the calculated activity level of each pattern information piece according to repression rules that are determined in consideration of the other pattern information pieces (C40 L52-68 and C41 L1-15);

and generating a new set of information units each having a new scalar and a scalar representing the set of information units, according to the information units and repressed activity levels of the pattern information pieces (C5 L1-30). Additionally, generating a new cell value is implicitly disclosed by Edelman et al.

But, Edelman et al. fails to clearly specify the steps for calculating an activity level.

However Edelman in combination with Ravi Chandran discloses the steps for calculating an activity level (Ravi Chandran Col 3 L6-22)

Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the above invention suggested by Edelman and combining it with the invention disclosed by Ravi Chandran. The results of this combination would lead to method and apparatus for analyzing input information and method of creating pattern for input information.

One of ordinary skill in the art would have been motivated to do this modification calculating activity level of pieces of information is known in the art as disclosed by Ravi Chandran.

Citation of Pertinent Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to method and apparatus for analyzing input information and method of creating pattern for input information:

- a. U.S. Pat. No. 5,283,839 to Edelman et al., which discloses apparatus capable of figure-ground segregation.
- b. U.S. Pat. No. 5,649,061 to Smyth, which discloses device and method for estimating a mental decision.
- c. U.S. Pat. No. 6,363,369 to Liaw et al. which discloses dynamic synapse for signal processing in neural networks.
- d. U.S. Pat. No. 6,424,961 to Ayala, which discloses adaptive neural learning system.
- e. U.S. Pat. No. 6,905,823 to Kallioniemi et al., which discloses cellular arrays and methods of detecting and using genetic disorder markers.

The following patents are cited to further show the state of the art with respect to method and apparatus for analyzing input information and method of creating pattern for input information:

- f. U.S. Pub. No. 2003/0228054 to Deco, which discloses neurodynamic model of the processing of visual information.
- g. Ghosh et al., "A temporal memory network with state-dependent thresholds", IEEE, 1993.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

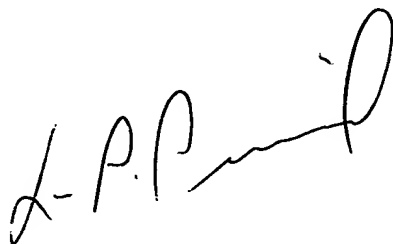
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Ortiz-Rodriguez whose telephone number is (571) 272-3747. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P. Picard can be reached on (571) 272-3749. The central official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P Picard can be reached on (703)308-0538. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'C. Ortiz-Rodriguez', with a stylized flourish at the end.

Carlos Ortiz-Rodriguez
Patent Examiner
Art Unit 2125

cror

October 17, 2005

LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100